New York State Department of Transportation
Red Flag NB2258W015

By: Alex Abreu
Flag Date: September 22, 2022

Superseding Information:
No Flags Superseded

Structure Information

BIN: **1065318**
Feature Carried: 278I278IX2M23027
Feature Crossed: 6TH AVENUE
Orientation: 8 - NORTHWEST

Region: 11 - NEW YORK CITY
County: KINGS
Political Unit: City of NEW YORK
Approximate Year Built: 1962

Posted Load Matches Inventory : Yes
Bridge Load Posting (Tons) : Not Posted for Load

Primary Owner: New York State Department of Transportation
Primary Maintenance Responsibility: 12 - State - Subcontracted to another Party
Typical or Main Span Type: 3 - Steel, 02 - Stringer/Multi-Beam or Girder
This Bridge is not a Ramp
Number of Spans: 322

Verbal Notification Information

Person Notified: Heinz Joachim, P.E.
Date: September 22, 2022 3:00:00 PM

Of: NYSDOT Region 11

Signature Information

Signature: Alex Abreu, P.E. 099761-1
Date: September 30, 2022

Reviewed By: Robert Kemp
Date: September 30, 2022

Attachments: 10

Flagged Elements

Parent Element	Element	Total Quantity	Unit
Span Number : 68			
	113 - Steel Stringer	52	ft

Flagged Condition Description

This Red Flag No. NB2258W015 is NEW.

Location: Span 68, Stringer S1 at Pier 67 above 3rd Avenue EB Service Road at the intersection of 58th Street.

Description:
The end of Stringer S1 in Span 68 at Pier 67 exhibits section loss for the full web height for 7" wide along the connection angles with remaining thickness measured (RTM) ranging from 0.12" to 0.21" resulting in approximately maximum 70% section loss (Photos 4 and 5). The lower stringer web above the bottom flange exhibits one corrosion hole for 22"L x 1"-4"H with RTM ranging from 0.21" to 0.23" for 1" wide surrounding the hole resulting in approximately maximum 48% section loss (Photo 6). The upper stringer web exhibits one corrosion hole for 4"H x 3"L at the top cope (Photo 7). The overall shear web area section loss is approximately 82% for this fascia stringer/curb girder.

Additionally, the edge of the bottom flange exhibits section loss up to 25% at the left side and 15% at the right side for 12"L x 2"W (Photo 8). The right side top flange exhibits 25% section loss at the edge of the flange for 12"L x 2"W (Photo 9). Also, both connection angles exhibit corrosion with 10%-15% section loss. (refer to Red Flag Condition Sketch Photo 2 for more details)

This portion of Stringer S1 is approximately 17ft long from Pier 67 to Intermediate Diaphragm #1 (ID1). The stringer at the connection to ID1 exhibits no significant defects in the stringer web (Photo 10). Given the significant section loss in the stringer web at the connection angle at Pier 67, the stringer does not pose any safety concerns of falling onto pedestrians or vehicular traffic below at the time of inspection.

This is a newly flagged condition.

Notes:
1. Adjacent Girder G23 exhibits up to 30% section loss for the full web height for 6" wide along the connection angles and 20% section loss in the lower web above the bottom flange for 24"L x 4"H.

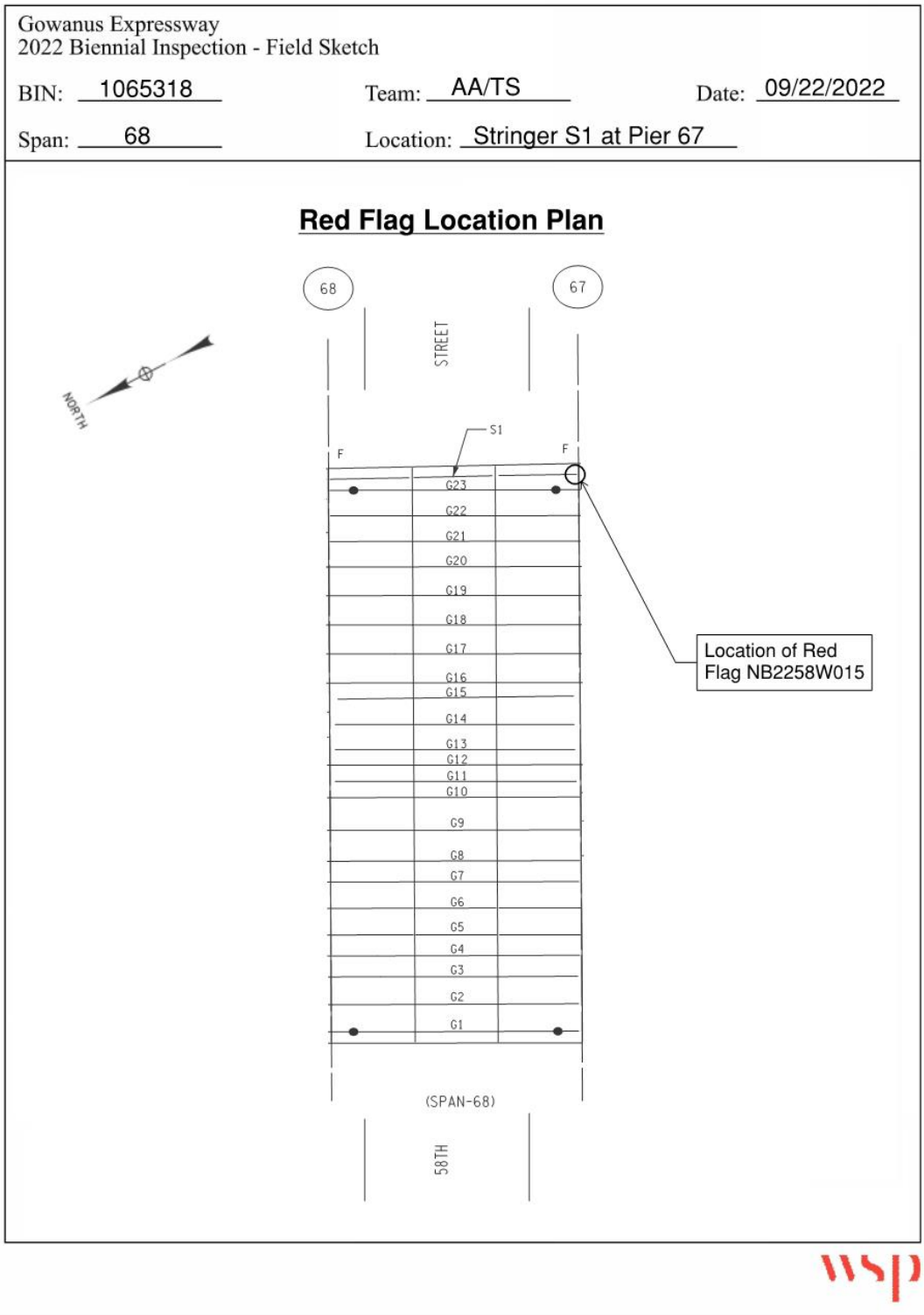
2. The distance from the right fascia steel plate to the edge of the roadway is approximately 26" and from the right fascia steel plate to the right face of the Stringer S1 web is approximately 31" indicating that Stringer S1 sees partial wheel (live) load.

3. A single lane closure on 3rd Avenue EB Service road at the intersection of 58th Street and 30ft bucket truck are required to access this location.

4. The previous 2021 Biennial Report documented the above stringer location as CS3 with the following condition state note:
Stringer S1 exhibits 20% section loss to the web along the connection angles. The bottom flange exhibits heavy steel delamination with up to 50% overall section loss.

Flag Photographs

Photo Number: **1** Photo Filename: **22_Flag Location Plan.jpg**



Attachment Description: **Red Flag Location Plan**

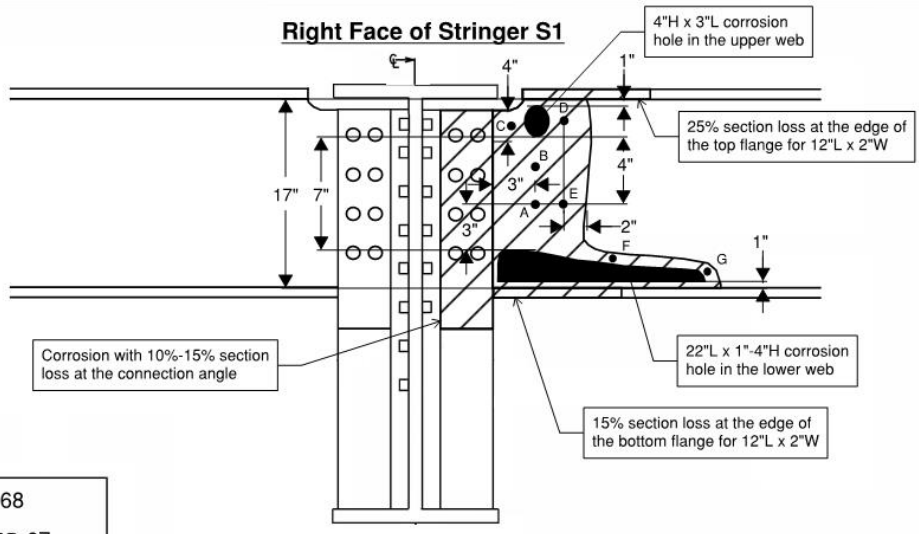
Photo Number: **2** Photo Filename: **22_Span 68_Pier 67_Stringer S1 Condition Sketch.**

Gowanus Expressway
2022 Biennial Inspection - Field Sketch

BIN: 1065318 Team: AA/TS Date: 9/22/2022

Span: 68 Location: Stringer S1 at Pier 67

Right Face of Stringer S1



SPAN 68
@ PIER 67
S1

Point	D-Meter Readings (in)	Calculated Section Loss
A	0.17	58%
B	0.12	70%
C	0.16	60%
D	0.16	60%
E	0.21	48%
F	0.21	48%
G	0.23	43%

Section loss Calculations:
Original web thickness = 0.40" (measured in field)
Shear web area:
(0.17"x1")+(0"x4")+(0.17"x3")+(0.12"x4")+(0"x4") = 1.16 in^2
Overall shear web area section loss:
[(16"x0.40")-1.16 in^2]/(16"x0.40") x 100 = 82% section loss

Notes:
-The left side bottom flange of the stringer exhibits up to 25% section loss at the edge of the flange for 12"L x 2"W.
-The length of this portion of Stringer S1 between Pier 67 and ID1 is approximately 17ft.
-The distance from the edge of the roadway to the right fascia steel plate is approximately 26".
-The distance from the right face of the Stringer S1 web to the right fascia steel plate is approximately 31".

SCALE: N.T.S

Attachment Description: **Red Flag Condition Sketch**

Photo Number: **3** Photo Filename: **22_113_3457.JPG**

Attachment Description: **General view of the flagged condition at Stringer S1 in Span 68 at Pier 67. Looking Begin.**

Photo Number: **4** Photo Filename: **22_113_3438.JPG**

Attachment Description: **The right face of Stringer S1 in Span 68 at Pier 67. The end of the stringer exhibits approximately 70% section loss for the full web height along the connection angle with one corrosion hole in the upper web and one corrosion hole in the lower web. Also, the connection angle exhibits corrosion with 10%-15% section loss. Looking Left.**

Photo Number: **5** Photo Filename: **22_113_3444.JPG**

Attachment Description: **The left face of Stringer S1 in Span 68 at Pier 67. The end of the stringer exhibits approximately 70% section loss for the full web height along the connection angle with one corrosion hole in the upper web and one corrosion hole in the lower web. Also, the connection angle exhibits corrosion with 10%-15% section loss. Looking Right.**

Photo Number: **6** Photo Filename: **22_113_3441.JPG**

Attachment Description: **The right face of Stringer S1 in Span 68 at Pier 67. Close up view of the 22"L x 1"-4"H corrosion hole in the lower web above the bottom flange. Looking Left.**

Photo Number: **7** Photo Filename: **22_113_3443.JPG**

Attachment Description: **The right face of Stringer S1 in Span 68 at Pier 67. Close up view of the 4"H x 3"L corrosion hole in the upper web near the top cope. Looking Left.**

Photo Number: **8** Photo Filename: **22_113_3449.JPG**

Attachment Description: **The left face of Stringer S1 in Span 68 at Pier 67. The edge of the bottom flange exhibits up to 25% section loss. Looking Right.**

Photo Number: **9** Photo Filename: **22_113_3452.JPG**

Attachment Description: **The right face of Stringer S1 in Span 68 at Pier 67. The edge of the top flange exhibits 25% section loss. Looking Left.**

Photo Number: **10** Photo Filename: **22_113_3453.JPG**

Attachment Description: **The right face of Stringer S1 in Span 68 at Intermediate Diaphragm ID1. The end of the stringer at the connection angle to ID1 exhibits no significant defects. Looking Left.**